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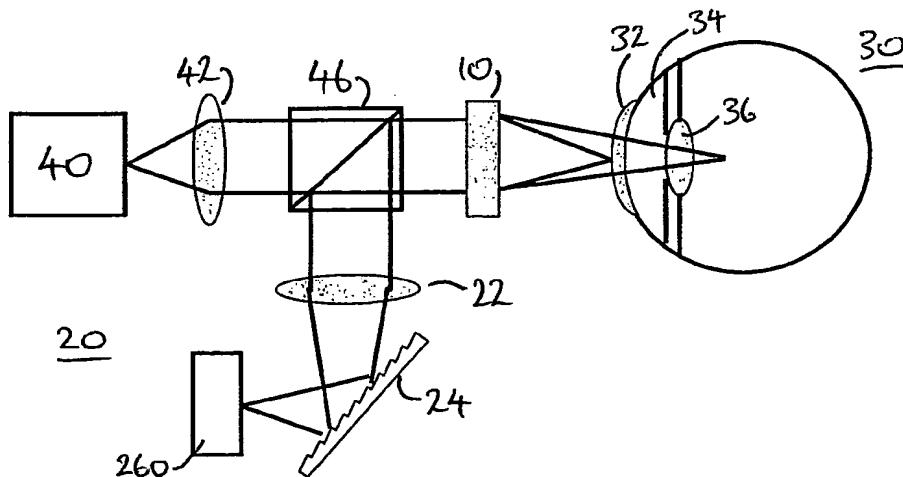
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(54) Title: EXTENDED FOCAL REGION MEASURING APPARATUS AND METHOD



(57) Abstract: A method and apparatus for measuring an apparent depth (l) of a section of an animal body are disclosed. Light is focused concurrently to an extended focal region (R) comprising a plurality or continuum of measurement locations. Light reflected by a refractive index interface coincident with one of the plurality of measurement locations is then detected. Detected light signals are generated from light reflected from first and second interfaces respectively defining the section under investigation, so that the apparent positions of the first and second interfaces may be derived. A confocal arrangement and an axicon element (12) may be employed. Preferably, the section is the aqueous humor (34) of an eye (30). From changes in its refractive index (n) corresponding changes in glucose concentration in the aqueous humor and, in turn, in the bloodstream of a patient may be derived, offering a non-invasive monitoring means for diabetic patients. Other compounds and structures of the body may alternatively be investigated.

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